Diseases of the Heart in Michigan

Michigan Department of Community Health
Cardiovascular Health, Nutrition and Physical Activity Section

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What are Diseases of the Heart?

Diseases of the heart (DOH) include several different cardiac diseases, such as ischemic heart disease (IHD), rheumatic heart disease, hypertensive heart disease, diseases of pulmonary circulation, heart failure, and dysrhythmias. The term IHD is often used interchangeably with the term coronary heart disease. IHD, the most common form of DOH, can result in angina and myocardial infarction (heart attack). The long-term sequelae of many DOH may include heart failure. DOH may be prevented by controlling underlying risk factors. 'Heart Disease' may be used interchangeably with 'Diseases of the Heart'.

Diseases of the Heart Mortality

In 2004, DOH were the number one cause of death in Michigan: 24,804 deaths, or 29.1% of all deaths. Figure 1displays the number of diseases of the heart deaths by age group, race and gender. One in three heart disease deaths occurred in individuals under age 75. Heart disease deaths occur across all ages, gender and races. Eighty-four percent of those dying from heart disease were White and 14% were Black. One percent were of other race/ethnicities. As Figure 1 displays, on average Blacks die from heart disease at an earlier age than Whites. Although males have a higher risk of dying of heart disease than females, the number of females dying is larger than for males because women live to older ages, a time when death from heart disease is more common. In 2004, 51% of all heart disease deaths were among women, 49% men. Rates have trended down, as shown in Figure 2, from an age-adjusted mortality rate of 309.3 per 100,000 in 1996 to 234.2 per 100,000 in 2004. Michigan heart disease mortality rates are considerably higher than the national averages. In 2006, the journal *Circulation* compared state rates and Michigan ranked 10th worse, based on 2002 rates, and 5th worse for the major heart disease category, coronary heart disease. State rankings can vary from year to year and may not be exact; but the overall data from the last several decades show that heart disease remains a serious health issue in Michigan.

Figure 1
Diseases of the Heart, Age-Adjusted Mortality Rates, Michigan 2004

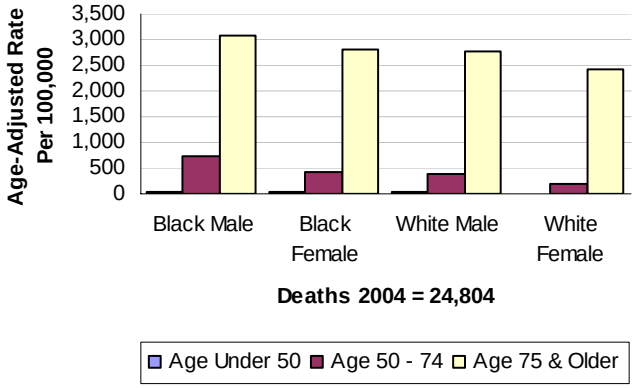
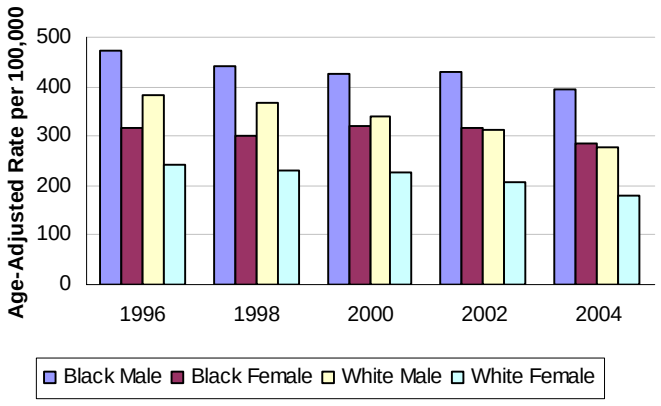


Figure 2
Diseases of the Heart, Age-Adjusted Mortality Rates, Michigan 1996-2004



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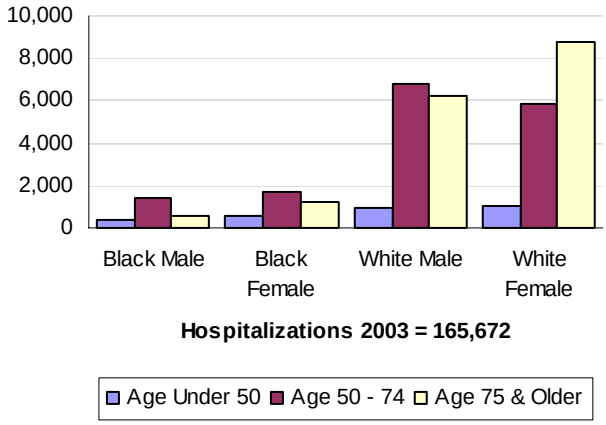
HOSPITALIZATION

In 2003 there were 165,672 hospital admissions for heart disease, about 12% of all admissions. (Hospital admissions data may contain the same person more than once.) Figure 3 displays the number of hospitalizations by age group, race and gender. While about four in ten admissions occurred in patients 75 years or more old; 63,664 admissions, or 38%, occurred in individuals under age 65, mostly among the traditional working-age populations. Persons age 65 to 74 accounted for 38,343 admissions, or 23%. Heart disease is a leading cause of disability. Those who have heart disease may suffer from various impairments. For example, those persons living with congestive heart failure may be chronically fatigued, have shortness of breath and have difficulty carrying out normal activities of daily living. Of those hospitalized for diseases of the heart, 85% were White, 15% were Black, 1% other. As Figure 3 displays, on average Blacks are hospitalized at an earlier age than Whites. Both the earlier deaths and earlier hospitalizations are associated with various elevated risks. Persons under the age of 45 had 10,466 hospitalizations. Forty-seven percent of heart disease hospitalizations were female; 53% male.

Figure 3
Diseases of the Heart, Hospitalizations, Michigan 2003



GEOGRAPHIC AREA SPECIFIC MORTALITY

Some areas of Michigan have higher heart mortality rates than others. Map 1, attached at the end of this report, shows Michigan counties classed by three levels of mortality rates, from low to high. The number of heart deaths is highest in Wayne, Oakland and Macomb Counties. This three-county area had over 27,000 heart disease deaths from 2000 to 2004.

PRIMARY PREVENTION

Table 1, below, describes selected risk factors for diseases of the heart. Controlling high blood pressure and high cholesterol, reducing smoking, being more physically active and avoiding excessive weight will reduce an individual's risk of heart disease. Other non-modifiable risk factors include age, race/ethnicity and family history.

Table 1
PREVALENCE OF DISEASES OF THE HEART RISK FACTORS, BRFSS, 2005

Risk Factor	Michigan	U.S.	State Rank (1 = worse)
High Blood Pressure	27.8%	25.5%	13
Cigarette Smoking	22.0%	20.6%	18
No Physical Activity	22.5%	23.8%	36
Obesity (BMI > 30)	26.2%	24.4%	15
Diabetes	8.1%	7.3%	15
High Cholesterol	38.9%	35.6%	4

The current poor rankings for risk factors imply that Michigan's above national average mortality rates are likely to continue into the future. The positive side is that overall heart disease mortality rates have been getting better in Michigan, compared to Michigan's past. Improving healthy behavior represents one opportunity for future progress.

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Knowledge of Heart Attack Risk Factors, BRFS, 2004

Table 2, below, describes what percent of Michigan adults are aware of Heart Attack risk factors. Heart attacks are not the only cause of heart disease deaths but are the largest component. Because Michigan used a state-specific surveying methodology, national comparisons are not available.

Knowledge of Heart Attack Warning Signs, BRFS, 2004

Table 3, below, describes major heart attack warning signs. Because Michigan used a state-specific surveying methodology, national comparisons are not available. Respondents to the BRFS telephone survey were asked open-ended questions about what they thought were the three most important signs or symptoms for heart attack. This is a conservative methodology and tends to produce lower estimates. Knowledge of warning signs is necessary if the public is to respond quickly and correctly to the onset of heart attack, and increases the chances that heart attack victims will receive appropriate and timely care.

Adults Age 35 and Older Who Have Been Told By Doctor That They Had a Heart Attack, BRFS, 2005

Table 4, below, describes Michigan adults age 35 and older, who have been told by a doctor that they had a heart attack, by age group and by household income. While useful, this data does not include those who did not survive a heart attack or those who were so incapacitated that they ended up in a nursing home. Blacks and Whites were approximately the same in the likelihood of reporting having been told by a doctor that they had had a heart attack, 7.0% to 6.5%. Males were told about twice as often as females, 8.2% to 5.1%. The percentages were also much higher among older age groups, as listed below. And major differences were reported among those with lower income and /or lower education. Only household income is listed, but education levels showed a similar pattern. Not including those residents who are institutionalized, approximately 350,000 Michigan adults age 35+ have had a heart attack. Many of them live with serious impairment and they have an elevated risk of a second heart attack.

Table 2
Prevalence of Michigan Adults Aware of Heart Attack Risk Factors, BRFS, 2004

Risk Factor	Michigan 2004
High Blood Pressure	22.6%
Cigarette Smoking	35.4%
Physical inactivity	31.3%
Overweight	38.8%
Diabetes	2.4%
Diet	37.3%
Heredity	19.2%
High Cholesterol	25.1%

Table 3
Prevalence of Knowledge of Heart Attack Warning Signs, BRFS, 2004

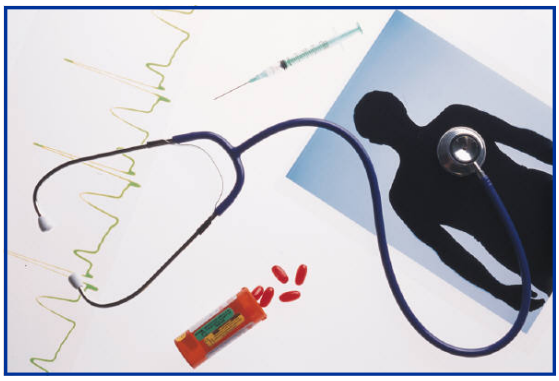
Warning Signs	Michigan 2004
Pain or discomfort in the chest	78.0%
Shortness of breath	39.3%
Pain or discomfort in other areas of the body	38.6%
Other signs, such as lightheadedness, sweating, nausea	23.2%

Table 4
Adults Age 35 and Older Who Have Been Told By Doctor That They Had a Heart Attack, by Age Group, BRFS, 2002, 2005

By Age Group	Michigan 2002	Michigan 2005
35-44	1.5%	1.3%
45-54	3.5%	3.4%
55-64	8.6%	7.9%
65-74	15.1%	13.5%
75+	20.7%	17.7%
Total pop. age 35+	7.2%	6.6%

Table 4 (continued)
ADULTS AGE 35 AND OLDER WHO HAVE BEEN TOLD BY DOCTOR THAT THEY HAD A HEART ATTACK, AND BY HOUSEHOLD INCOME, BRFS, 2002, 2005

By Household Income	Michigan 2002	Michigan 2005
<$20,000	12.9%	12.9%
$20,000 - 34,999	11.6%	9.6%
$35,000 - 49,999	4.4%	5.3%
$50,000 - 74,999	3.9%	4.2%
$75,000+	2.9%	2.7%
Total population, age 35+	7.2%	6.6%



SECONDARY PREVENTION – ACUTE CARE TREATMENT

Secondary prevention focuses on aggressive, comprehensive, risk factor and disease management. This includes: blood pressure control, lipid management, increased physical activity, smoking-cessation, weight management , control of diabetes, stroke and heart disease interventions such as the use of antiplatelet /anticoagulants, ace inhibitors, aspirin, beta-blockers, surgical procedures and other treatments. The goal of acute treatment of myocardial infarction is to salvage as much heart tissue as possible. This is achieved primarily through the use of thrombolytic drugs (t-PA used most often) and angioplasty. The treatment goal is to open the artery within 90 minutes of the patient arriving in the emergency room. Coronary bypass may also be a treatment option.

DISEASES OF THE HEART COSTS

Estimated total diseases of the heart costs for Michigan in 2006 are 8.9 billion dollars. Direct costs are estimated at 5.1billion: hospital, nursing home, physicians, other professionals, drugs, medical durables and home health care. Indirect costs are estimated at 3.8 billion: lost productivity from disability and premature death. The American Heart Association estimates total costs nationally at 258.5 billion dollars. (Michigan costs based on U.S. census estimates for Michigan and American Heart Association national estimates, state costs estimated at 3.44% of national costs.)

The Data

The data comes from different years because the data is prepared and ready for use at different times. Mortality data is available for 2004; hospitalization data, 2003, and preliminary Behavioral Risk Factor Survey data, 2005. More information on data sources and citations is available on request.

GUIDELINES TO REDUCE HEART DISEASE – ADAPTED FROM THE AMERICAN HEART ASSOCIATION

1. Know your blood pressure; have it checked regularly; and keep high blood pressure under control.
2. Find out if you have circulation problems and take the prescribed medications if you do.
3. If you smoke, stop.
4. Keep your weight at the appropriate level.
5. If you have high cholesterol; follow your doctor's recommendations to keep it under control.
6. If you are diabetic, follow your doctor's recommendations.
7. Include physical activities in your daily routine.
8. Eat a lower sodium and lower fat diet.

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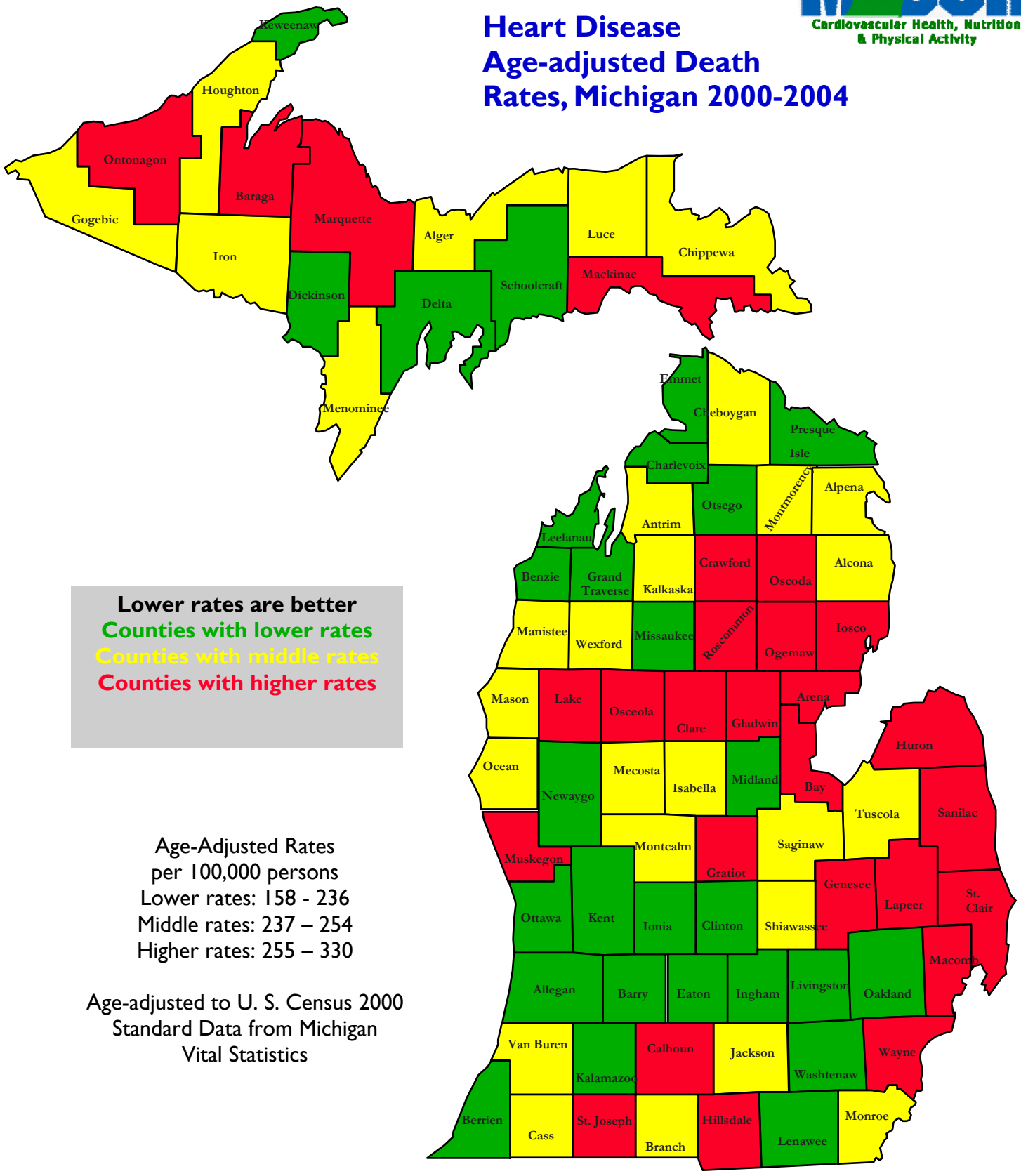
Heart Disease Age-adjusted Death Rates, Michigan 2000-2004



Lower rates are better
Counties with lower rates
Counties with middle rates
Counties with higher rates

Age-Adjusted Rates
per 100,000 persons
Lower rates: 158 - 236
Middle rates: 237 – 254
Higher rates: 255 – 330

Age-adjusted to U. S. Census 2000
Standard Data from Michigan
Vital Statistics